

In the Claims:

Please cancel Claims 4, 7 and 44-47, without prejudice, and amend Claims 1, 3, 5, 48 and 49 as indicated below. The status of all pending claims is as follows:

1. (Currently Amended) An embedded electroconductive layer comprising:

any one of an opening part or a depressed part formed in an insulating film on a substrate;

a barrier layer covering said opening part or said depressed part, ~~said barrier layer being made of a first material;~~ part;

a metal growth promoting layer formed directly on said barrier layer, said metal growth promoting layer being made of a ~~second material~~ refractory metal nitride that is different from ~~said first material~~ a material of said barrier layer; and

an electroconductive layer embedded in said opening part or said depressed part via said barrier layer and said metal growth promoting layer, said electroconductive layer being formed of a Cu layer, an Al layer, or an Al alloy layer having Al as a main component thereof, and said electroconductive layer being formed directly on said metal growth promoting layer.

2. (Currently Amended) The embedded electroconductive layer according to claim 1, wherein said barrier layer is one member selected from the group consisting of an amorphous Ti-Si-N layer, WN_x layers, where x is a variable such that $0 \leq x \leq 1$, TaN_x layers, where x is a variable such that $0 \leq x \leq 1$, and an Al_2O_3 layer.

3. (Currently Amended) An embedded electroconductive layer comprising:

any one of an opening part or a depressed part formed in an insulating film on a substrate;

a barrier layer covering said opening part or said depressed part;

a metal growth promoting layer formed directly on said barrier layer, said metal growth promoting layer being made of a ~~material~~ refractory metal nitride different from that ~~a material~~ of said barrier layer; and

an electroconductive layer embedded in said opening part or said depressed part via said barrier layer and said metal growth promoting layer, said electroconductive layer being formed of a Cu layer, an Al layer, an Al alloy layer having Al as a main component thereof, and said electroconductive layer being formed directly on said growth promoting layer;

wherein said metal growth promoting layer is a TiN layer containing oxygen at a lower concentration than said barrier layer.

4. (Cancelled)

5. (Currently Amended) An embedded electroconductive layer comprising:

any one of an opening part or a depressed part formed in an insulating layer on a substrate;

a ground layer made of refractory metal nitride containing oxygen at a high concentration in the lower part thereof and at a low concentration in the upper part thereof, and said ground layer covering the surface of said insulating ~~film~~ layer in said opening part or said depressed part; and

an electroconductive layer embedded in said opening part or said depressed part via said ground layer, said electroconductive layer being formed of a Cu layer, an Al layer, or an Al alloy layer having Al as a main component thereof, and said electroconductive layer being formed directly on said upper part of said ground layer.

6. (Currently Amended) The embedded electroconductive layer according to claim 5, wherein said ground layer is formed of a TiN layer.

7-36 . (Cancelled)

37. (Previously Presented) The embedded electroconductive layer according to claim 1, wherein said metal growth promoting layer has a thickness of at least approximately 10nm.

38. (Previously Presented) The embedded electroconductive layer according to claim 37, wherein said metal growth promoting layer has a thickness of approximately 20nm.

39. (Previously Presented) The embedded electroconductive layer according to claim 1, wherein said barrier layer has a thickness of at least approximately 10nm.

40. (Previously Presented) The embedded electroconductive layer according to claim 3, wherein said first material is WN_x , where x is a variable such that $0 \leq x \leq 1$.

41. (Previously Presented) The embedded electroconductive layer according to claim 3, wherein said first material is TaN_x , where x is a variable such that $0 \leq x \leq 1$.

42. (Previously Presented) The embedded electroconductive layer according to claim 3, wherein said first material is amorphous $TiSiN$.

43. (Previously Presented) The embedded electroconductive layer according to claim 3, wherein said first material is Al_2O_3 .

44.-47. (Cancelled)

48. (Currently Amended) The embedded electroconductive layer according to claim 1, wherein said metal growth promoting layer is a TiN layer ~~including substantially no oxygen except at its surface due to said TiN layer being~~ formed by a chemical vapor deposition (CVD) process.

49. (Currently Amended) The embedded electroconductive layer according to claim 3, wherein said metal growth promoting layer is a TiN layer ~~including substantially no oxygen except at its surface due to said TiN layer being~~ formed by a chemical vapor deposition (CVD) process.